



PATENT
Docket No.: 5055/40

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Antonio Gigola)
Serial No. : 09/482,046)
Cnfrm. No. : 6489)
Filed : January 13, 2000)
For : PROCEDURE AND PRESS FOR PRODUCING)
SCREENING AND HUMIDIFYING PANELS)
IN PARTICULAR FOR AVICULTURAL)
FACILITIES)

Examiner:
A. Chevalier

Art Unit:
1772

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REQUEST FOR RECONSIDERATION

Mail Stop: AF
Commissioner for Patents
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Dear Sir:

In response to the July 2, 2003, office action, reconsideration is respectfully requested.

Claim 7 and claims 8-9 dependent thereon stand finally rejected under 35 U.S.C. § 103(a) for obviousness over U.S. Patent No. 3,415,502 to Munters ("Munters") in view of U.S. Patent No. 3,963,810 to Holmberg et al. ("Holmberg"). For the reasons noted below, applicant respectfully requests reconsideration of the rejections of claims 7-9 of the above-identified application.

The U.S. Patent and Trademark Office ("PTO") has maintained its position, confirmed at page 3 of the outstanding office action, that one of ordinary skill in the art would have been motivated to substitute the impregnated cardboard of Holmberg as the material used for the contact body of Munters to arrive at the presently claimed invention, "because Holmberg shows that plastics, metals, and impregnated cardboard are equivalent *for their use* in the art of cooling tower contact bodies..." (emphasis added).

Applicant respectfully disagrees, because the combination of Munters and Holmberg fails to provide any expectation of success in preparing a screening and humidifying panel as recited in claim 7, which recites that the panel is "formed from a

plurality of cardboard sheets each having formed therein a plurality of *non-rectilinear* undulated channels..." (emphasis added).

It is well established that the proposed modification of the prior art must have had a reasonable expectation of success at the time the invention was made. *See Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991). In this instance, the PTO has asserted that "reasonable expectation of success is found in the fact that these materials [i.e., plastics and impregnated cardboard] are art recognized equivalents barring evidence showing that the prior art recognized equivalents are not capable of being use [sic] in combination with another piece of prior art."

This position of the PTO is improper. Applicant noted in the prior response, dated April 23, 2003, that Holmberg teaches the equivalency of cardboard and plastics *only* in those devices of Holmberg that have rectilinear channels and therefore can be formed of any of the materials identified therein (e.g., metals, plastics, or impregnated cardboard). The problem lies with the substitution of plastics by cardboard, whether impregnated or not, in a panel that possesses *non-rectilinear* channels. As noted in the present application at page 2, lines 1-3, prior to applicant's invention "...it [was] *impossible* to make undulated cardboard with non-rectilinear undulations" (emphasis added). In support of applicant's position that plastics and impregnated cardboard are not equivalents when forming panels as claimed, i.e., having *non-rectilinear* channels, applicant submits herewith a joint declaration of Pietro Cassaghi and Plinio Molinari under 37 C.F.R. § 1.132 ("Joint Declaration").

It is a common knowledge in the field of paper and cardboard production and manufacturing that, in view of the structure of paper or cardboard being made of single fibers adhering to each other, application of a tensile stress deriving for example from a non-uniform distribution of deformations or from a simultaneous deformation along two or more different directions would not cause an elongation of a deformation of fibers, but a separation of the fibers from each other with a consequent sudden tearing of the paper or cardboard sheet. Joint Declaration, ¶ 6. This behavior of paper and cardboard, indisputably known in the art, is completely different from the behavior of other materials such as plastics and metals under the same conditions, which materials have a molecular structure allowing a high degree of deformability (plasticity, ductility, malleability, etc.). *Id.*

Holmberg refers to a panel to be used in cooling towers and air humidifiers to provide thermal contact between water and an air flow. Joint Declaration, ¶ 7. The panel is made of a plurality of adjacent sheets having undulating channels with rectilinear axis. Holmberg mentions, at col. 1, lines 24-26 and col. 3, lines 62-64, that this kind of panel is

usually made of corrugated plates or foils of metal, plastics, or impregnated cardboard. *Id.* This statement is true and, in the point of view of a person skilled in the art, it does clearly mean that metal, plastics, and impregnated cardboard can be indifferently used to produce panels for cooling towers or air humidifiers: in other words, these materials are equivalent for the general purpose of allowing a good exchange between air and water in said facilities. *Id.* For certain, there is not any statement in Holmberg about metal, plastics, and impregnated cardboard being equivalent in their physical and mechanical characteristics and, consequently, in their behavior during the panel manufacturing process. *Id.* On the other hand, such statement would be fully in contrast with the well-known knowledge of people skilled in the art of paper and cardboard production and manufacturing, cited above, that paper and cardboard are inextensible and any application of tensile stresses to a paper or cardboard sheet would immediately cause breaking thereof. *Id.* Some of the panels disclosed by Holmberg, such as those shown in Figures 1, 2, and 3, have undulated channels with a rectilinear axis. *Id.* Of course, these panels can be indifferently made of metal, plastics, or impregnated cardboard: deforming cardboard according to this configuration, i.e., with rectilinear folds or waves, would indeed be performed without any risk of tearing the cardboard sheet. *Id.* Other panels disclosed by Holmberg, such as that shown in Figure 5, have channels with a sinusoidal axis. *Id.* By observing the complex shape and the sharp edges of the folds and the spacer elements 5,6 of the panel illustrated in Figure 5 of Holmberg, a person skilled in the art immediately understands that said panel cannot be made of cardboard, but of drawn metal or, better, of plastics. *Id.* Holmberg does indeed suggest that the panel according to the invention described therein should be made of plastic, preferably of thermoplastic plastic, for example, polyvinyl chloride, which can be easily worked to obtain the desired shape. *Id.* In summary, Holmberg merely teaches that a panel with undulated channels can be made of any material suitable to be manufactured for obtaining the desired shape, i.e., indifferently of metal, plastics, or impregnated cardboard, if only rectilinear deformations are requested and only of metal or plastics if more complex configurations must be obtained, which would involve a non-uniform distribution of deformations or a simultaneous deformation along two or more different directions. *Id.*

Munters refers to an exchanger packing for cooling towers, which is made of a plurality of undulated layers. Joint Declaration, ¶ 8. Some of the panels disclosed by Munters, for example that shown in Figure 7, have non-rectilinear (zig-zag) channels. *Id.* However, as clearly mentioned throughout the whole description of Munters, all of the panels disclosed therein are made of synthetic plastic material, such as polyvinyl chloride. *Id.* No

mention is made in Munters of the possibility of making the disclosed panels of cardboard, in compliance with the common knowledge that paper and cardboard are inextensible and any application of tensile stresses to a paper or cardboard sheet would immediately cause breaking thereof. *Id.* In summary, Munters merely teaches that if a panel is to be produced with sheets characterized by non-rectilinear undulated channels, it must be made of plastic materials and, therefore, a person skilled in the art desiring to produce a panel with cardboard sheets having non-rectilinear channels would not get any useful teachings from Munters. *Id.*

None of the above-cited patents, whether alone or in combination, suggests to the person skilled in the art that a screening and humidifying panel, as presently recited in claims 7-9, can be formed of impregnated cardboard (or any cardboard for that matter). At most, following the teachings of the above-identified patents, one could have chosen to use cardboard instead of plastics, but in the case of using cardboard the person of skill in the art would have been induced to make the channels rectilinear according to common knowledge that paper and cardboard are inextensible and, therefore, any application of tensile stresses to paper or cardboard sheet would inherently cause breaking thereof. Joint Declaration, ¶ 10. Importantly, no suggestions can be found in the above-cited patents about any manufacturing process wherein the cardboard sheets are formed with non-rectilinear undulated channels, let alone the process described in the present application, using the die and press described in the present application. *See id.*

Thus, in consideration of the foregoing, applicant submits that despite Holmberg's recitation of using plastics, metals, and impregnated cardboard in forming a panel to be used in cooling towers and air humidifiers, the combination of Munters and Holmberg fails to teach or suggest how one of ordinary skill in the art could make a panel of cardboard as presently claimed. Absent such teaching or suggestion, the combination of these references would not have allowed one of ordinary skill in the art to possess any expectation that success could be achieved in preparing a product as presently claimed. Absent such expectation of success, one of ordinary skill in the art would be unable to prepare a panel as presently claimed. Absent such enablement, therefore, the basis of rejection asserted by PTO amounts to nothing more than an invitation to try. That is not the standard for obviousness. *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

For all these reasons, the rejections of claim 7 and claims 8-9 under 35 U.S.C. § 103(a) for obviousness over Munters in view of Holmberg are improper and should be withdrawn.


In addition to the foregoing, applicant notes that in the response submitted on April 23, 2003, applicant requested that the PTO introduce statements into the record (i) clarifying the PTO's position concerning the extensibility of cardboard versus plastics, and (ii) identifying where in the prior art a method is taught for forming *non-rectilinear* channels in cardboard. No response to the latter was provided in the outstanding office action, presumably, for the reasons noted above, because the PTO could not identify any prior art reference teaching such a method. In response to the former, however, the PTO merely asserted that: "...Holmberg disclosed impregnated cardboard, not just cardboard. Impregnated cardboard would offer added strength and extensibility over mere cardboard." While asserting repeatedly that arguments by counsel cannot take the place of evidence of record, the PTO's assertion, absent any citation to prior art or other evidence in support, is likewise deficient.

Because claims 7-9 are allowable for the reasons noted above, applicant respectfully requests the rejoinder of withdrawn claims 10-17.

In view of all the foregoing, it is submitted that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

Date: December 23, 2003

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